

From ab4el.com Tue Jul 5 13:24:03 1994  
From: rohrwerk@holonet.net  
Subject: "Balanced" L Nets?

On 07-05-94 janderson@polycom.com wrote to qrp@Think.COM,

> I believe that there is a similar article in one of the antenna  
> compendiums that goes through a bit more analysis (than Lau's article)  
> of this type of design (balun in front of unbalanced L-network).  
> Although the L-network looks unbalanced, the balun forces it to be  
> balanced - and using one inductor, rather than two, greatly simplifies  
> the design.  
>  
> I don't know if this really works - in a quick read-thru of  
> the article it seemed that something was missed in the theoretical  
> discussion - I really should go back and dig into it more deeply. But  
> I agree with John, give it a try, it is a MUCH simpler design.  
>  
> - Jeff, WA6AHL

It might be a "pretty" good scheme overall, but SOMETHING must be unbalanced if you really are a perfectionist. After all, phase delays in AM broadcast networks are finagled via various different L and C values in the lines to different towers. You might have current 180 degrees out of phase, but voltage not.

Which may be fine for simple dipoles

* John Seboldt...Mpls, MN...	:	The joint chiefs of staff:	*
Amateur radio K0JD...	:	General Confusion and Major Error	
* rohrwerk@holonet.net	:	("Car Talk")	*

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Tue Jul 5 19:34:09 1994  
From: rohrwerk@holonet.net  
Subject: "Balanced" L Nets?

On 07-05-94 janderson@polycom.com wrote to qrp@Think.COM,

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-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Wed Jul 6 12:04:36 1994

From: janderson@polycom.com

Subject: Re: "Balanced" L Nets?

John Sebolt wrote:

It might be a "pretty" good scheme overall (balun in front of L network - Jeff), but SOMETHING must be unbalanced if you really are a perfectionist. After all, phase delays in AM broadcast networks are finagled via various different L and C values in the lines to different towers. You might have current 180 degrees out of phase, but voltage not.

Which may be fine for simple dipoles

\*\*\*\*\*

As I recall, the article states that the current balun in front of the L network forces the current on the transmission line to the antenna to be equal and opposite. The discussion explained this by calculating the currents using Kirchoff's current law, and it was in this part of the discussion that I think something was lacking (maybe the author didn't include the current through the inductor?). Now I really need to go back and re-read the article.

However, let's assume that the currents are equal and opposite at the tuner's output (more on this later). Isn't this all that I really care about? And won't the voltage phase be forced to be correct in a "balanced" system if the currents are equal and opposite? All the articles that I've read discussing current baluns stress that we want current balance, rather than voltage

balance, when feeding a balanced antenna system (simple dipole or not).

If the system isn't balanced by design, then I would think that I shouldn't want a balun - but I'm still very hazy on the theory of antennas and transmission lines - would I still want one on an unbalanced antenna (like a vertical?).

If the current balun (in front of the L-network) insures that the currents are balanced (and opposite) in the transmission line, then I think I can hypothesize why the L-network looks balanced: the balanced currents create a "virtual" L-network in the line opposite the line containing the L-network. That is, let's assume that the L-network creates the proper impedance match in one line.

If the current balun forces the currents to be equal (and opposite) in both lines, then the other line's current will "look" as though it too has an L-network in it (since it's current behaves just like the current in the line with the L-network - they're equal (and opposite)) - thus, we have created a balanced network (from the transmission line's point of view), even though it's physical topology is unbalanced.

Sounds great. The only problem is, it's based on assumptions. Some of the questions that I have are:

- o Does a current balun in front of an L-network REALLY balance the currents in the transmission line, even though the topology of the L-network is unbalanced?
- o Is current balance all that I should care about? Is there ever a case where voltage, not current, balance is important?
- o When should baluns NOT be used? Or can I always have a current balun in-line, irrespective of the antenna system?

Looks like I should try some experiments...

- Jeff, WA6AHL

From ab4el.com Fri Jul 8 12:10:25 1994

From: "Evert Halbach" <CS-ERH@nich-nsunet.nich.edu>

Subject: 20 mtrs "Shrinking"

What is the garbage I hear around 14.050 and above. Sounds like WEFAX or something. It seems as though they keep gaining on the cw portion of the band. It looks like they have "slid" down an additional 10 kc (Khz) since I started listening to cw again a couple of months ago. Am I wrong or is it that we are being "invaded"???

73 de WA50JI Evert

Evert R. Halbach WA50JI

Internet - cs-erh@nich-nsunet.nich.edu

Phone - (504) 448-4999

Snail - P.O. Box 2168 Thibodaux, La. 70310

From ab4el.com Thu Jul 7 13:11:34 1994

Subject: 40-40 questions

From: "John F. Woods" <jfw@ksr.com>

So I finally put my new 40-40 into its case last night and started aligning it. The receiver seemed to work OK, but I noticed a very strong spur at about 7,001,700Hz or so (well, the local oscillator was at 3.000700, and I think that the NE-602 IF mixer is running at 4.001MHz, but my frequency counter disturbs it too much to be sure). I haven't tried aligning the transmitter yet, since I'd like to know where that spur is coming from; does anyone else hear it?

From ab4el.com Sun Jul 3 21:49:23 1994

From: "JEFF M. GOLD" <JMG@tntech.edu>

Subject: AC4HF/P/M/QRP

All,

leaving for NC for a few days.. will be on the air (hopefully) while driving..bungee corded the MFJ20mSSB in the car with a Ham Stick.. hooked up my Radio Shack ignition noise filter (couldn't operate the MFJ in the car before because of engine noise.. amazingly with the RS in line using the Cigarette lighter..seemed to work when I tested it out).

should be on in the AM on 20 meter about 14.245 and maybe the evenings.

73

Jeff

From ab4el.com Tue Jul 5 12:25:07 1994

From: Randall Rhea <randall@informix.com>

Subject: Re: AC4HF/P/M/QRP

=>

=>All,

=>  
=>leaving for NC for a few days.. will be on the air (hopefully)  
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=>Stick.. hooked up my Radio Shack ignition noise filter (couldn't  
=>operate the MFJ in the car before because of engine noise..  
=>amazingly with the RS in line using the Cigarette lighter..seemed  
=>to work when I tested it out).

The cigarette lighter jack should not be used to operate ham equipment.  
Run fused power leads directly to the battery using heavy-guage insulated  
cable through the firewall.

=====

Randall Rhea	Informix Software, Inc.
Client Services Engineer	randall@informix.com

From ab4el.com Tue Jul 5 19:55:52 1994  
From: rohrwerk@holonet.net  
Subject: Re: AC4HF/P/M/QRP

On 07-05-94 randall@informix.com wrote to JMG@ntech.edu:

> The cigarette lighter jack should not be used to operate ham  
> equipment. Run fused power leads directly to the battery using  
> heavy-guage insulated cable through the firewall.

This is standard wisdom if you want to avoid noise, especially at HF, or if you  
have the current draw of a medium power HF rig. But it depends on what you get  
by with! For 2 meters, 40 watts, I have long used the cigar lighter plug with  
no ill effects.

* John Seboldt...Mpls, MN... :	The joint chiefs of staff:	*
Amateur radio K0JD... :	General Confusion and Major Error	
* rohrwerk@holonet.net :	("Car Talk")	*

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Thu Jul 7 12:31:12 1994  
From: jason@persoft.persoft.com (Jason Penn)  
Subject: Another NorCal 40 Lives!

Greetings to the QRP mailing list.

I just finished the assembly of my NorCal 40 Partial Kit. I did the bulk of the  
soldering and inductor winding over the July 4 weekend. The only snag I ran  
across was a dead transmitter section. After some signal tracing and head  
scratching I found a tiny solder bridge shorting the VFO to ground near

the input of the xmit mixer. It puts out 3 watts according to my 'scope or 2.5 according to my questionable old Swan watt meter.

I did a few things different than specified, but not by choice. Since the MVAM108 varactors have not come in I went to the local electronic "odds-and-ends" dealer (mostly "odds" :-)). He dug up a box labeled "varactors" and told me they were something like 42 pF at 4.1 volts. He gave me one. In addition, Mouser was out of stock on the 39 pF mica cap in the VFO, so I used a 33 pF mica cap. The VFO was about 200kHz low. I took two turns off L9 for a total of 57 turns. C50 varied the VFO couldn't matter.

I welcome anyone's comments on the use of the 33 pF cap and the unknown varactor. The varactor looks like a glass diode with several funny bumps, not a 2 leaded plastic transistor pack. I think the box they came from were labeled with a part number, but I didn't write it down. If it is deemed "acceptable" by Wayne, et. al., I might offer to send units to any takers on this list building NC40 partial kits. I say "might" because the local "odds-and-ends" dealer was going out of business the day I stopped in for the varactor. It is unknown if I can still get them from him or if he can still find them after his move. He is switching to strictly mail order, no retail store front and moving to a smaller place that will only hold about a third of his (then) inventory of "stuff".

Now to make that first NorCal 40 contact.....

73

--

Jason F. Penn N9RPT | Persoft, Inc. | jason@persoft.com  
Whenever I want to find something, it's always in the last place I look.

From ab4el.com Tue Jul 5 14:51:04 1994  
From: Gary M Diana <gmd@adm01.rfc.comm.harris.com>  
Subject: antenna tuners, etc.

Hello All -

I have been reading the articles of late, which discuss antenna tuners which handle balanced and unbalanced feedlines. No mention of the SuperTee Tuner yet... so here goes.

I just built a SuperTee antenna tuner(1). It has both balanced and unbalanced interfaces to the feedline. On the balanced input, a trifilar wound balun is used. When using a balanced feedline, the tuner is "floated" above ground; when used with a random wire or unbalanced (coax) feedline, the "low" side input is jumpered to ground.

Any comments on this arrangement?

The real reason for this post is my interest in better understanding the losses incurred by using an antenna tuner. I have some experiments in mind:

- measure RF energy in and out of the antenna tuner
- measure field strength of signal, with and without tuner
- measure receive signal strength
- use a resonant antenna (requires no tuner) and observe field strength, receive strength. Compare to non-resonant antenna.

What I am after here is accounting for the entire 1 watt I am putting out of the transceiver, and optimizing the system. Operations to date with (my) QRP equipment has been seat-of-the-pants, willy-nilly, and no attention given to potential versus realized performance.

Anyone out there diverted time to tuner/feedline/antenna analysis and willing to share the results?

73, gary n2jgu

From ab4el.com Tue Jul 5 21:14:23 1994

From: Gary M Diana <gmd@adm01.rfc.comm.harris.com>

Subject: antenna tuners, etc.

Hello All -

I have been reading the articles of late, which discuss antenna tuners which handle balanced and unbalanced feedlines. No mention of the SuperTee Tuner yet... so here goes.

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given to potential versus realized performance.

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73, gary n2jgu

From ab4el.com Wed Jul 6 12:00:50 1994

From: rohrwerk@holonet.net

Subject: antenna tuners, etc.

On 07-05-94 gmd@adm01.rfc.comm.harris wrote to qrp@Think.COM:

> I just built a SuperTee antenna tuner(1). It has both balanced and  
> unbalanced interfaces to the feedline. On the balanced input, a  
> trifilar wound balun is used. When using a balanced feedline, the  
> tuner is "floated" above ground; when used with a random wire or  
> unbalanced (coax) feedline, the "low" side input is jumpered to  
> ground. Any comments on this arrangement?

I'm coming to the conclusion from our discussions here (with some reservations) that this is quite satisfactory. Just take this approach with any of your favorite tuner designs.

Question is, what kind of "trifilar wound balun" is this? You should have a conventional type transformer that balances currents, not one of those trifilar transmission line baluns that doesn't guarantee balanced current. Or some kind of choke balun -- ferrite sleeve or a coil of coax. I use about 30 feet of RG58 on a piece of 5 inch PVC pipe.

>I have some experiments

>in mind:

> - measure RF energy in and out of the antenna tuner

This is the way to do it. Put various load resistors on the tuner output, tune it up, then calculate power on each end (assuming you have a good RF voltmeter)

> - measure field strength of signal, with and without tuner

Assuming your antenna will work without a tuner! Half the reason for a tuner is to use various random loads, or use an antenna on different bands without concern for varying impedance.

> - measure receive signal strength

Too iffy

> - use a resonant antenna (requires no tuner) and observe field strength,



> receive strength. Compare to non-resonant antenna.

Too many variables with two different antennas. Question of resonant vs. non resonant couldn't be separated from the fact that it's two different antennas.

I just did a relative measurement of two tuners to calm my fears of losses in my link-coupled resonant tuner (balanced version of DeMaw's "Simple Resonant ATU" in QRP Classics). They were both tuned on the same antenna, and I had a toroid current transformer on one leg of the antenna feedline. I was persuaded that both were equal within the measurement accuracy of my primitive gear. The other tuner was my balanced L Network with coax balun on the input. In both cases, maximum forward power coincided well with lowest SWR on the input.

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* John Seboldt...Mpls, MN... :      The joint chiefs of staff:      *
| Amateur radio K0JD...      : General Confusion and Major Error |
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-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Wed Jul 6 10:03:19 1994

From: mvjfm@mvubr.att.com (James M Fitton +1 508 960 2577)

Subject: Beach meeting

Gang,

Randy AA2U is coming to visit my beach cottage in Salisbury MA on the weekend of July 23. Let's turn it into a QRP event. There is sleeping bag space on the floor and sofas, limited parking, and camping nearby.

Jim W1FMR

From ab4el.com Tue Jul 5 04:43:20 1994

From: jeffrey@math.hawaii.edu (Jeffrey Herman)

Subject: cleaning variable caps

Gang, I've got a 2-ganged variable capacitor that I salvaged out of an old 2-4 Mc marine band transciever (it was AM). There seems to be a bit of salt residue on several of the plates. I've tried using a toothbrush to no avail.

Is there a solvent I can use that won't remove the bearing lubricant? Or should I just dunk it in any solvent then re-lub the bearings?

This pup will be the tuning cap for my new antenna tuner; just finished winding a 26 turn, 6 inch long, 3 inch diameter inductor of possibly 11 gauge wire - it's just a bit under 3/32 inch - very

stiff stuff; found about 100 feet of it in a dumpster...

Jeff NH6IL

From ab4el.com Tue Jul 5 15:39:45 1994  
From: JimN00CT@aol.com  
Subject: Costa Rica QRP.....

Has anyone on the Net ever been (recently) licensed in Costa Rica?? I will be there at the end of the month, and would REALLY like to operate QRP from there. I obtained the poop sheet from the ARRL, and it makes it sound like a TOTAL runaround to get a reciprocal license once I'm there.

I am restricted by several things: I will only be in the capital San Jose on Saturday and Sunday ( the 16th and 17th) which will restrict official governmental activities I may need to get said license.

I have been given some pointers on going there w/ radio equipt: take original receipt of purchase, register with customs BEFORE I leave, and if taking a rig down there, I really should have a license if I don't want everything impounded.

If anyone has operated down there (or knows someone who has) please email me  
jimn0oct@aol.com

Sorry for the \_wide\_ bandwidth, but at least I may be running QRP!! (Anybody need it on 20 or 40??)

72 (+/- 1) Jim N00CT

From ab4el.com Tue Jul 5 16:20:58 1994  
From: GroverC@gvgadg.gvg.tek.com (Grover Cleveland)  
Subject: Crystal frequencies

If you were going to order a few crystals for the 40, 30, and 15 meter bands, what would you order? I have 7040 and 10106 on my list. What else would you recommend, especially for 30m? I do work in the Extra portions of 40/20/15 but 30m is probably where I'll spend a lot of time.

By the way, CW Crystals in Missouri certainly has attractive prices for FT-243 crystals. I notice one special for a 40m fundamental on 7017.5 which would double (14.035) or triple (21.0525) nicely - only \$2. Thanks to whoever sent me their address.

\*\*\*\*\*

Grover Cleveland                      Instructional Designer, The Grass Valley Group, Inc.  
Internet: groverc@gvgadg.gvg.tek.com                      Radio: WT6P@KE6LW.#NOCAL.ca.us.na  
Voice: (916) 478-3153                      DoD:7388                      Fax: (916) 478-3831

\*\*\*\*\*

From ab4el.com Sun Jul 3 15:09:05 1994

From: LVE@phy6.inel.gov

Subject: Field Day Brag...

Well why not... its a slow Sunday!

Location: Small hill about four miles East of Idaho Falls, ID -- completely devoid of any trees to spoil the view (or hold up antennas...).

Rig: TenTec 509, 3 to 5 watts out.

Antennas: 10/15/20m trapped dipole and 180 ft long wire (80/40/20m) held up by 20 ft TV masts.

Power source: Deep cycle RV battery connected to a 25W solar panel.

Operating class: 1B

Call used: W1HUE/7

No. operators: 1

Operating time: About 18 hours

Results: Band      CW      Phone

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80m      21      0

40m      81      4

20m      45      12

15m      19      12

10m      2      25

-----

168      53      (221 total QSO's)

Total claimed score (including bonus points): 2145

High winds (50 - 70 mph) came up Saturday night; by late Sunday morning the dipole had blown down and the center of the long wire was just above the sage brush -- but I was still making contacts on 40! Luckily I was in an RV and not a tent!

Observation: I think a lot of folks don't make contacts because they are too

far off the frequency of the station they are calling, and don't listen off-frequency for stations calling them. I had several stations answer my CQ's more than 1 kHz from my frequency.

73E-2, Larry W1HUE "Real QRPers don't use beam antennas..."

From ab4el.com Tue Jul 5 16:26:03 1994

From: brucerob@epas.utoronto.ca (Bruce Robertson)

Subject: first qrp success

Well, I did it: I made a QSO (well several) with less than 5w out. It's been a goal for some time, but with an apartment whip antenna the qrp tough indeed. However, last weekend was up at the cottage, and once I'd put up the 40m loop, I was off. I looked around the Canada Day contest and then powered down. The results were great. As long as the other station was around S 4, he'd hear me fine. The funny thing was, I didn't really know what my power out is: my wattmeter is too QRO and my attempts with 50ohm resistors a cap and a diode with a DMM were inconclusive. (The formula is  $P_{out} = V^2 / (2 \cdot R)$ , no?) Nevertheless I was in the 2-5 watt range. The crowning glory was reaching VE7BX0 in North Vancouver: over 2000 miles!

Next is building the qrp wattmeter, finishing my h/b 30m rig and tweaking the antenna. Too bad I won't be able to get on the QRP contest this weekend! Are there any other good occasions for qrp this summer?

72 (I say with pride),

-----  
Bruce G. Robertson      internet: brucerob@epas.utoronto.ca  
Dept of Classics      Satius est enim otiosum esse quam nihil agere.  
University of Toronto   It's more fun to relax than it is to do nothing  
   Pliny \_Ep\_ 1.9.8  
-----

From ab4el.com Thu Jul 7 07:09:43 1994

From: "Justin Rains" <usr12314@TSO.UC.EDU>

Subject: For Sale: MFJ 9040 & HTX-100

Hello all, I have the following for sale:

(1) MFJ 9040 QRP CW radio. In good shape, never taken anywhere. Covers 7.000-7.150 MHz. Very fun to use, I have had good luck with it. Asking price \$125.00.

(2) Radio Shack HTX-100 10 meter transceiver. Works good. Not used much. Does CW/SSB (USB only). Power output switchable from 5/25 watts. Asking price \$125.00.

My phone number is (606)-635-0703, or just leave me some E-Mail if you are

interested.  
73 de AA9KM  
Justin

From ab4el.com Thu Jul 7 08:51:00 1994  
From: "Justin Rains" <usr12314@TSO.UC.EDU>  
Subject: For Sale: MFJ 9040 & HTX-100

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My phone number is (606)-635-0703, or just leave me some E-Mail if you are interested.  
73 de AA9KM  
Justin

From ab4el.com Mon Jul 4 19:49:39 1994  
From: g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV)  
Subject: Friedrichshafen Report

Just returned from the Friedrichshafen Hamvention in south Germany where we ran a G QRP Club booth. A few comments:

Place: Friedrichshafen is situated on Lake Constance on German border close to Austria and Switzerland. There are fine views of snowcapped Alps across the lake. Good weather for this annual event - about 85-90 degrees with evening storms - very dramatic with thunder echoing along the alpine mountains. The event is annual (last weekend in June) and said to be the largest ham event in Europe.

#### Scope of Event:

Four large exhibition halls with large covered flea market. The items on sale are two-thirds radio - one third computer (almost all IBM format). Flea market was very good with a lot of real Russian and eastern European military surplus items - but these might dry up in a year or two - but still plenty of it at good prices.

Several Russians made the journal with trailers of surplus items for the flea market and although their prices were low, they do very well out of the deal. It seems that the plan is often to empty the trailer and take a wrecked car back on it.

I bought quite a few morse keys (some I have never seen before)

with a view to selling them at Dayton next year.

There are no forums but some companies run teaching sessions - but these are usually in German, although English seems to work in most places at the event..... thank goodness !

Attendance:

I don't know the numbers but not as big as Dayton - but very full. Many people camp in the outer car parks which contained tents and RVs from every part of Europe. We towed our caravan there - but not again ! - it was 1,010 miles from my front door to the site... a lot of it up hill! I found out when I got there that guest houses within range of the site only charge about 25 dollars a night. It is also linked by a good rail service to other parts of Germany. Next time I will just take the car.

The event is good and the social life around the site excellent.

Example : I wanted to show some people the QRP PLUS in use. So we operated it in a Lithuanian tent, using a 20m dipole supported from a ex-army Russian mast. Operators included a Croatian, a Slovak, a German and myself, refreshed by cold beer from a Turkish CB group who had a freezer van on site and finished off by brandy supplied by a Russian ! Oh . . . we were quite impressed by the QRP PLUS in action from the site.

Almost 200 G QRP Club members came to visit the booth with prefixes from almost every EU country and we received strict orders to return next year. We shared our booth with the OK QRP Club, represented by Petr, OK1CZ.

A good event - worth visiting. Only real setback was when I lost my clutch driving back through Belgium. It took 2 days to get fixed and cost me 700 dollars !

Excuse any errors - typed very quickly - I also came back to a mountain of G QRP Club mail - not to mention 270 items on THIS email group !  
.....and also to an NN1G 40-40 Kit - thanks Dave - lost your email address again, but a letter in the snail mail for you.

--

George Dobbs G3RJV  
G-QRP Club

"It is vain to do with more,  
what can be done with less."

----- William of Occam (1290-1350)

From ab4el.com Thu Jul 7 18:01:29 1994

From: g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV)

Subject: G QRP CLUB

Following an enquiry, may I explain how to join the G QRP Club.

Anyone sending their FULL POSTAL ADDRESS  
to g3rjv@gqrp.demon.co.uk

or to the postal address below  
will receive a sample of SPRAT  
with information and application form for the G QRP Club.  
(If you layout your address as below, that also helps - I just cut it out  
to use as an address sticker)  
Typical QRPer - Anything to save energy....

George Dobbs G3RJV  
St. Aidan's Vicarage  
498 Manchester Road  
Rochdale  
Lancs  
OL11 3HE  
England  
--

-----  
George Dobbs G3RJV                                "It is vain to do with more,  
G-QRP Club                                        what can be done with less."  
----- William of Occam (1290-1350)

From ab4el.com Tue Jul 5 02:07:44 1994  
From: rohrwerk@holonet.net  
Subject: Re: Happy "G5RV" antenna

On 07-03-94 zabrods@med.ucalgary.ca wrote to rohrwerk@holonet.net regarding  
the Balanced L Network with balun in front of it:

> The sleeve method works for a t tuner although it can get very, very  
> warm when running something more than qrp! The design looks intriguing  
> but EXPENSIVE even with flea market prices for roller  
> inductors.....how to keep them in synch? I have been interested in  
> building one.....has anybody actually done this? Performance and  
> technical building tips appreciated.

Well, I found some of the GE roller inductors for \$25 each. You wouldn't HAVE  
to use roller inductors, of course. I really have not tried to sync the two --  
I just adjust each to the same inductance! With a little work and shopping for  
belts and pulleys at the local surplus house, I guess I could sync them, but I  
don't work contests and such where speed is a factor.

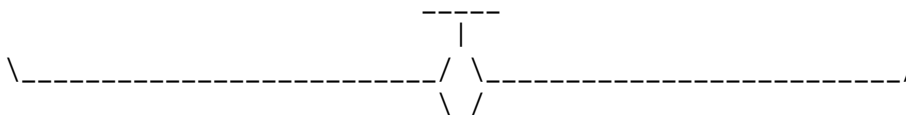
You might get by with just putting the balun in front of almost any tuner, but  
keeping ground floating. Zack Lau's "QRP Transmatch for Balanced Lines" in Qrp  
Classics (and the Handbook?) is just a regular L net with the balun in front,  
and floating from ground. Something doesn't feel quite right about that, if  
you REALLY want a true balanced line, but it's something to try.

\* John Seboldt...Mpls, MN... :        The joint chiefs of staff:        \*  
| Amateur radio K0JD... :    General Confusion and Major Error    |

```
-> Alice4Mac 2.3 E QWK Eval:05Mar94
```

I have seen this described before by the fellow who described it in one of the arrl antenna compendiums. The sleeve method works for a t tuner although it can get very, very warm when running something more than qrp! The design looks intriguing but EXPENSIVE even with flea market prices for roller inductors.....how to keep them in synch? I have been interested in building one.....has anybody actually done this? Performance and technical building tips appreciated.

```
*****
Dr. Rick Zabrodski BSc, MD, CCFP(E)      *           VE6GK "glider king"
EMAIL:  zabrodsk@med.ucalgary.ca          *           "M.D. on weekdays"
Packet: VE6GK@VE6YYC.#cgy.ab.can.na      *           "Solar powered aviator
Phone: (403) 271-5123  Fax: 225-1276      *           on weekends!"
*****
```



```
> On 07-01-94  turner@safety.ICS.UCI.EDU wrote to  qrp@Think.COM:
>
> > P.S. Can anyone recommend the best articles / texts on general, very
> > basic antenna tuner circuits?  I would like to know about the basic 5
> > or 6 designs, and elementary theory of operation.  I have the ARRL
> > Antenna book, which is not what I want.
>
> QRP Classics gives us "A Simple Resonant ATU" (I made a cobbled-up balanced
> version), and "A QRP Transmatch for Balanced Lines" (a variant of one of my
> favorite designs)
>
> My favorite:  Feb. 1990 QST, page 28ff details "A *Balanced* Balanced Antenna
> Tuner".
>
> Basic premise:  Most commercial tuners put a 4:1 toroid
> transmission-line transformer on the output and call that suitable for
> balanced lines.  This is nuts, because they don't perform under
> reactive, unmatched conditions (the usual situation in tuned lines) and
```



```

> aren't balanced to give equal *current* in both legs under all
> circumstances. You need equal *currents*, not *voltages*, in a balanced
> line to keep it from radiating.
>
> Solution: put your balun on the INPUT -- a choke balun of coiled coax
> is cheap, ugly, but very effective. Can also use ferrite sleeve balun,
> like the W2AU. And, use a balanced L network, where you split the
> series elements in both legs of the balanced line.
>
> My version:
>
>
>           _____UUUUUUU_____<
>          / Roller inductor 1 |
>         /                     |
> Coax choke balun<           Var. cap.= Bal. ant.
> 20' RG58          \         |
> on 5" form         \_ _UUUUUUU_____<
>                    Roller inductor 2
>                    (mechanically linked to #1)
>
> Little RF in shack since I put this in!
>
> Your balun could also be a ferrite sleeve balun, or a 1:1 CONVENTIONAL
> transformer of adequate power rating.
>
> * John Seboldt...Mpls, MN...As a ham, K0JD...as a human...well,... *
> |                               rohrwerk@holonet.net                       |
> *      J.S. Bach of Borg: "Your style will be assimilated."              *
>
> -> Alice4Mac 2.3 E QWK Eval:05Mar94
>

```

From ab4el.com Tue Jul 5 21:11:52 1994  
 From: bruce.florip@amail.amdahl.com  
 Subject: How much is a Tek 2213 scope wor

Kevin,

In answer to the question 'how much is a TEK 2213 worth?' I picked one up at the local ham-swap a year ago in nice shape with the probes and the accessory bag on top for \$100.00. I think this is the bottom of the scale, and is partially due to the fact that the A/B channel selection didn't work due to a mechanical problem with a switch. They are a nice small scope!

Good luck with the negotiations,  
 Bruce

AA7AR/6 baf00@amail.amdahl.com

From ab4e1.com Tue Jul 5 16:49:09 1994  
From: xenolith@halcyon.com (Kevin Purcell)  
Subject: How much is a Tek 2213 scope worth?

I have a Tek 2213 (owned by my boss) sitting in my cube. He bought it about a 10 years ago new for \$1200 and seems to have used it few times (and looking at it I beleive him, it looks mint). Its a 60Mhz, dual trace, tv and delayed sync scope.

Apart from mildewed manuals (it looks like it have been stored in a garage) it looks in very nice condition.

So I am considering buying it but neither of us know how much it is worth. So I need your advice.

In my Tucker catalog I see they have reconditioned/recalibrated 2213 scopes for \$695. So that is the only price point I have so far (and Tucker tend to be a little high).

So send your estimates to me. I'd appreciate it!

73

Kevin Purcell, N7WIM / G8UDP	Are you a Mac developer? Live close to Seattle?
xenolith@halcyon.com	We need you in the dBug Mac Dev SIG. Mail me!
(206) 649-6489	"Organising programmers is like herding cats"

From ab4e1.com Tue Jul 5 22:15:09 1994  
From: jjw@seastar.seastar.org (John Welch)  
Subject: Re: How much is a Tek 2213 scope worth?

I've seen them in Nuts & Volts for about \$100-\$200, slightly more if freshly calibrated and cleaned. I got one at a company auction for \$16-ish that needs a diode in the squarewave calibrator replaced and has no handle, or probes. I also got another scope, 100MHz dual channel that needs contact cleaner, for about the same price, but things like this are rare events.

--

John Welch, N9JZW

From ab4e1.com Wed Jul 6 02:13:11 1994  
From: jjw@seastar.seastar.org (John Welch)  
Subject: Re: How much is a Tek 2213 scope worth?

I've seen them in Nuts & Volts for about \$100-\$200, slightly more if freshly calibrated and cleaned. I got one at a company auction for \$16-ish that needs a diode in the squarewave calibrator replaced and has no handle, or probes. I also got another scope, 100MHz dual channel that needs contact cleaner, for about the same price, but things like this are rare events.

--

John Welch, N9JZW

From ab4el.com Sun Jul 3 02:33:28 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Iambic Keyer boards: Setback

Hi Gang,

Some bad news. I had a friend do a run of 24 boards for me but he didn't do it quite as well as I had hoped, below my own expectations. So now I feel bad charging anyone for work below standards. I am thinking of sending out the boards anyway, for free, and if you want to donate some money, please do so. How does this sound to you guys? Or, should I do the boards myself which will be much better quality and carry on as before, \$US2.30 per board? Alternatively, I could send the boards out for free and if you like it you could ask me and let me re-do the boards for you.

The reason I asked my friend to do the boards in the first place was because he had the board cutting tool which I do not have. Fibre-glass is very abrasive and tends to destroy normal cutting tools (jigsaw etc.) This one is a diamond saw. Shucks, now I remember what they used to say, "If you want it done right, do it yourself!".

Please give me some feedback so I know how to proceed.

While you are at it, I am still looking for somewhere (ftp site) to put layout patterns for 3 boards I have made, postscript format. The three boards are:-

1. Mini-Iambic keyboard
2. Frequency counter (ARRL Handbook 1994)
3. MOSFET Amplifier 10-25 watts output (depending of Vcc)

The Handbook provides a board layout but that board has some problems:-

1. No regulator on board.
2. Double sided.
3. Not compact.

4. Pre-amp is off-board.

My board layout is smaller, about 3.5" by 1.9", and works fine with small rigs like the NN1G, Gary Breed, probably Norcal 40. The board is quite dense and to do this right you need to print with a laser printer direct on the transparency for best results. I have made 3 of these and all work perfectly. I am not going to do these boards as they take too much time to drill. Displays only the last 4 significant digits so you can tap signal off the VFO direct. Includes some modifications or extra instructions to go. Actually, if the ARRL is looking for a better layout, I'd be glad to contribute. I built mine on double sided board with one side as the ground plane but it will work fine on a single sided board as well. For those of you wishing to soup up the NN1G, Sierra, Norcal ... you may be interested.

The amplifier accepts 1-2 watts input and uses two MTP3055E's in push-pull configuration. Delivers some 12 watts with a +13.8V power supply. Has autosensing T/R switching relay on board with filters already on board. Also has variable biasing for linear operation. Board measures 3.8" by 1.75" and should be built on double sided board with one side as the ground plane.

I am now working on a miniaturized Gary Breed, possibly using a SMT version of the MC3362, the MC3362DW. I like this design because it does not require the use of an air-variable. A multiturn pot takes up considerably less space and I am aiming at having a modified design with a better band-pass filter, MMIC (MAR-6) RF pre-amp, RIT, AGC, audio filter and amplifier, and possibly an S-Meter output, all on a board the size of the NN1G. Wish me luck. I am now awaiting some parts to arrive from OHR before starting as I need to know some of the component sizes. I hope the Gary Breed performs well, with no birdies in the RX range, and good input figures. My NN1G is exhibiting considerably IF (10 MHz WWV) breakthrough. Not sure which part of the circuit is responsible but I suspect that the RF band-pass filtering is not ideal. Can anyone tell me whether I should go with a miniaturized NN1G or a miniaturized/modified Gary Breed? All this in terms of:-

1. Sensitivity, S/N ratio, etc.
2. Dynamic range, strong signal handling
3. VFO stability
4. Signal purity/birdies etc.

I'd like some opinions so as to help me decide which one to soup up. I actually prefer a diode-ring mixer and a front-end similar to the one used in the ARK or the OHR. My aim is to finally produce a really-really compact mono-band transceiver, with a frequency counter and about 6-8 watts maximum RF output. Will appreciate any help along these lines. RX must be superhet, for best performance. Synthesized VFO is out of the question as that will certainly take up even more board space.

So there. Tks for reading to this point, HI HI :)

73,  
Daniel

--

```
+-----+-----+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b  | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-----+-----+
```

From ab4el.com Wed Jul 6 11:09:08 1994  
From: K1WWI@aol.com  
Subject: IOTA Contest???

Does anyone know the dates for this year's IOTA contest. Last year it was in late July. In 1993 I was operating qrp ssb and cw from NA139 and had a blast. QRP operators do not have the opportunity of creating pile ups often. Being on an island during the contest has that effect. The signal reports are a chuckle, I think that NA139 is a 40 db island.

Will be on the island for the last 2 weeks of July again this year and would like to operate in the contest but cannot find anything published. Help!

72 / 73,

Rand, K1WWI  
Powered by the sun, radiating less energy than a flashlight

From ab4el.com Thu Jul 7 12:18:51 1994  
From: adams@chuck.dallas.sgi.com (Chuck Adams)  
Subject: July Issue

June Issue of K5FO newsletter is in the mail  
as we speak. July issue to be mailed on  
Tuesday of next week.

BTW: Checked with ARRL. There may have been  
only TWO CP-60 awards given out. Talk about  
a small number!!! Wonder who the other person  
was.

dit dit  
Chuck Adams K5FO CP-60  
adams@sgi.com

From ab4el.com Mon Jul 4 20:15:39 1994  
From: dh@deneb.csustan.edu (Doug Hendricks)  
Subject: July NorCal Meeting

The July meeting of the NorCal QRP club was held Sunday, July 3 at the California Burger Restaurant near Livermore. About 30 members attended, and we all attributed the drop in attendance to the Holiday weekend. The attendance at the Livermore swap was also down. But, we had another great time.

Ralph Butler, K6ZAN brought one of the new Portable Power Stations, which is currently advertised in QST. Ralph bought it at Dayton, and had plenty of brochures to pass out. It is a 7 amp hour 12 volt supply that can be recharged by plugging in to 110V or the cigarette lighter of your car. It has several voltages available, and looks like just the ticket for that camping trip or Field Day. It is a little big for backpacking, but if you are going on a camping trip in the car, it is just right.

Eric Swartz brought the schematic for the Epiphyte SSB rig that one of our Canadian members, Derry Spittle, VE7QK, has designed. It fits on a 3 by 5 inch board, and Eric put it through all of the tests with his Spectrum Analyser and says that it is well within specs. Derry has done a lot of work with the rig, and it is an 80 meter SSB rig, with coverage from 3750 to 3780 using a crystal resonator and a VXO circuit. It can be easily modified for an external VFO, and is perfect for SSB experimenting. Eric made several contacts using the rig and a simple antenna, and says that everyone comments on the nice sounding audio. A construction article will appear in the next issue of QRPP, and it will include a complete set of instructions on how to build it, with parts lists, sources of parts, schematic, pcboard artwork, parts overlay, block diagram and a wiring diagram. For those of you who want pc boards, Far Circuits will be producing them. Please wait until the Sept. issue comes out, as the boards will not be available until the first of September. Special thanks go to Derry for writing the article and designing the board and Eric for doing the schematics. NorCal will not be kitting this rig, but the article will give full details on parts procurement. You should be able to build this one for about \$50.

Ed, WB6LRV, a new member from Sunnyvale, brought his Ark 20 from S & S Engineering. It is a beautiful rig, and is the brother to the ARK 40 that first came out from S & S. Ed says the rig works fine and is really fun to build. He also had the MFJ816 SWR/Wattmeter that is just right for QRP work. It is in a nice small cabinet, and works well at QRP levels. It was the first time that I had seen that particular meter, and I was impressed.

Terry Seeno, N6YQD, had his NorCal 40 backpacking case with all of his accessories there. You have to see the neat arrangement that Terry has to believe it. He has taken a Nylon Cordura case and modified it to carry everything that he needs to set up a station. He took it with him to Alaska, and

said that it passed all of the "stress" tests that he could give it. The members were impressed with a couple of items that Terry uses. One is a set of homebrew paddles made from a piece of 3/4" plastic pipe, and 2 momentary switches. Terry has written an article and it will appear in the next issue of QRPP. He has also designed a neat way to store his antennas. I don't know about you, but I have made many portable antennas that work fine, yet when I get home from the camping trip, I wind up throwing them away because they always seem to wind up in a tangle mess of spaghetti. Terry has designed a system of storing the antenna that uses a wooden reel, and he will write that one up for the December issue. It is really fun to see all of the ingenious devices that QRPers think up.

Glenn, KK6ZC, brought his A & A Gary Breed transceiver. This was a very popular rig a couple of years ago, and is still available today. Makes a good 20 meter transceiver.

Vern Wright, W6MMA from Sacramento talked me out of my MFJ 20 meter SSB rig a month ago. I bought it from Martin Jue at Dayton, and was so busy when I got back that I hadn't had time to try it out. Vern has been looking high and low across the United States for one of the rigs, and when he found out that I had one, couldn't wait for me to give him a report. He finally wore me down, and I sold him the rig. Today he brought his log that is 3 pages of nothing but SSB DX!! He gives the rig very high ratings, and said that at his club's field day the guys shut down the QRO rig and all wanted to operate the QRP rig. What a great story. Keep it up Vern!!

And, a NorCal meeting wouldn't be complete without a couple of NorCal 40 rigs. J.C. Smith brought his to demo the way that he mounted his keyer. He used a piece of angle aluminum to mount it and did it in such a way that it really strengthens the front panel. He too, has written an article, and it will be in the Sept. issue of QRPP.

Stan Goldstein N6ULU is up to 77 confirmed countries on the NorCal 40. Does anyone else have more? Looks DXCC with the NorCal is imminent.

And a final word, membership went over the 600 mark this weekend. Really amazing what the explosion in QRP interest has become. We are having fun and you are invited to join us next month at the California Burger Restaurant at the Santa Rita Exit west of Livermore. The get together starts at about 11:00 and goes until everyone goes home. Usually about 1 or 1:30. Hope to see you there.

72, Doug, KI6DS

From ab4el.com Wed Jul 6 14:24:45 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Keyer

Gang,

I have some boards ready now but not the full 22. I will send to whoever sends me their mailing address first. For those who want to send money, please send to:-

Daniel Wee  
7 Mount Sophia Road,  
Singapore 0922  
\_SINGAPORE\_

73,  
Daniel  
--

```
+-----+-----+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b  | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-----+-----+
```

From ab4e1.com Wed Jul 6 12:30:47 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Keyer to mail

Hi Gang,

Will the following people please send me their mailing address? Please inform me of any changes or corrections.

Call	Qty	E-mail
KC5CUW	1	kell@lark.jsc.nasa.gov
VE3VAW	1	pepperb@gov.on.ca
WA6AH6	2	janderson@polycom.com
WB0GAZ	2	dgf@netcom.com
N6ULU	2	stan@cruzio.com
KB7SOK	1	tenspeed@tc.fluke.com
KM6WT	4	mont@netcom.com
VE2KN	1	jlyons@cam.org
John F. Woods	1	jfw@ksr.com
N7WIM/G8UDP	3	xenolith@halcyon.com
KB0LRB	1	geitgey@ukanvm.bitnet
John Nystedt	1	nystedt@indirect.com
Marty	1	meh@cbsmsl.cb.att.com
Total	22	

If you want to get the board, and you are not already on the list, please send name, mailing address and quantity. This is for the mini keyer



boards. I will test each board before mailing. You are not obliged to pay material cost if you are not satisfied with the boards, they're not that great. I've done better. But please do send the mailing costs.

BTW, how to I get the list of members on this list from think.com?

73,  
Daniel  
--

```
+-----+-----+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b  | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-----+-----+
```

From ab4e1.com Tue Jul 5 14:20:40 1994  
From: Clark Fishman (FSAC-FCD) <cfishman@PICA.ARMY.MIL>  
Subject: LM 386

The LM386 is designed to drive a speaker....if you want to drive headphones use a low noise op amp like a 5534 instead.....remember...ears is sensitive animals...

good listening...Clark Fishman WA2UNN  
  
cfishman@pica.army.mil

From ab4e1.com Tue Jul 5 20:11:23 1994  
From: Clark Fishman (FSAC-FCD) <cfishman@PICA.ARMY.MIL>  
Subject: LM 386

The LM386 is designed to drive a speaker....if you want to drive headphones use a low noise op amp like a 5534 instead.....remember...ears is sensitive animals...

good listening...Clark Fishman WA2UNN  
  
cfishman@pica.army.mil

From ab4e1.com Wed Jul 6 12:01:31 1994  
From: lhalliday@creo.bc.ca  
Subject: Re: LM 386

Clark F. WA2UNN writes about noisy LM386s:

> The LM386 is designed to drive a speaker....if you want  
> to drive headphones use a low noise op amp like a 5534  
> instead.....remember...ears is sensitive animals...

I often use LM386s in radios, but with modern Walkman-style headphones the hiss can get pretty bad. After making sure all the impedances and such are correct, adding a low-pass filter to roll off all the racket above 2 kHz or so really helps.

The LM386 is an old design, and it shows. If you want superior audio, use newer chips or discrete transistors.

73 from Burnaby,  
laura VE7LDH

From ab4el.com Wed Jul 6 20:34:04 1994  
From: Jeff Jones <jeffj@crl.com>  
Subject: Re: LM 386

>  
>  
> Clark F. WA2UNN writes about noisy LM386s:  
>  
> > The LM386 is designed to drive a speaker....if you want  
> > to drive headphones use a low noise op amp like a 5534  
> > instead.....remember...ears is sensitive animals...  
>  
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> headphones the hiss can get pretty bad. After making sure all the  
> impedances and such are correct, adding a low-pass filter to roll  
> off all the racket above 2 kHz or so really helps.  
>  
> The LM386 is an old design, and it shows. If you want superior  
> audio, use newer chips or discrete transistors.  
>  
> 73 from Burnaby,  
> laura VE7LDH

What other chips would you suggest as all I have ever seen has been LM386s and have no idea what others are out there?

Jeff  
AB6MB

From ab4el.com Mon Jul 4 19:43:54 1994

From: Michael Stein  
Subject: LM386 noise?

<OSYSMAS@MVS.OAC.UCLA.EDU>

I've just put together an audio amplifier using a LM386N (date code 7636) and using earphones it has a rather loud background hiss. Is this normal?

This is my first use of this chip and I like the low current draw (about 4 mA), but the hiss has to go.

I'm using the gain = 20/minimum parts circuit -- no bypass capacitor on pin 7, no network on output pin 5.

PS: Just to try it, I've got a capacitor mike attached to the input, so there aren't any other semiconductors except the FET in the mike, and no RF around.

From ab4el.com Tue Jul 5 13:09:21 1994  
From: rohrwerk@holonet.net  
Subject: LM386 noise?

On 07-04-94 OSYSMAS@MVS.OAC.UCLA.EDU wrote to qrp@Think.COM:

> I've just put together an audio amplifier using a LM386N (date code  
> 7636) and using earphones it has a rather loud background hiss. Is  
> this normal?

Depends on what you mean by "rather loud."

POSSIBILITY... do you have the right load on the input?

POSSIBILITY... your headphones are very efficient and you're hearing the noise floor to a greater degree than you would with a speaker. Solution: attenuating resistors in the output line to the headphones!

Not many ham references talk about this, but it is a common practice in audio equipment. A headphone is more efficient than a speaker, plus you're listening with the things right in your ear. The resistor just puts the headphone efficiency more on a par with a speaker, so that for about the same volume setting you get about the same perceived audio level.

I first discovered this with a hi-fi setup as a kid. Why did I hear more noise when attaching the phones to the speaker output than I did thru the headphone jack? Because the phone jack had 100 ohm attenuating resistors, thus swamping the noise and making you turn up the volume higher so the s/n ratio of the output amp is decent. 100 ohms would be appropriate for such a moderate power hi fi amp (25 watts/channel). For our needs, probably less.

You could also have oscillations and such, but had to take this opportunity to point out this little-known problem.

```
* John Seboldt...Mpls, MN... :      The joint chiefs of staff:      *
| Amateur radio K0JD...      : General Confusion and Major Error |
* rohrwerk@holonet.net      :      ("Car Talk")                  *
```

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Tue Jul 5 19:23:11 1994  
From: rohrwerk@holonet.net  
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```
* John Seboldt...Mpls, MN... :      The joint chiefs of staff:      *
| Amateur radio K0JD...      : General Confusion and Major Error |
* rohrwerk@holonet.net      :      ("Car Talk")                  *
```

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Wed Jul 6 11:33:28 1994  
From: "Muenzler, Kevin" <MUENZLERK@uthscsa.edu>  
Subject: RE: LM386 noise?

```
>I've just put together an audio amplifier using a LM386N (date
>code 7636) and using earphones it has a rather loud background
>hiss. Is this normal?
>
>This is my first use of this chip and I like the low current
>draw (about 4 mA), but the hiss has to go.
>
>I'm using the gain = 20/minimum parts circuit -- no bypass
>capacitor on pin 7, no network on output pin 5.
>
>PS: Just to try it, I've got a capacitor mike attached to
>    the input, so there aren't any other semiconductors
>    except the FET in the mike, and no RF around.
>
```

I have found that the LM386N is sensitive to an input impedance mismatch. This could be the problem if you are getting an uneven sounding white-noise (noise level changes with input level).

Kevin

Legal stuff:

The above opinions are my own and not necessarily those of the staff, faculty, administration, or lab animals (woof!) of The University of Texas Health Science Center at San Antonio.

```

Kevin R. Muenzler, WB5RUE
muenzlerk@uthscsa.edu
The University of Texas Health
Science Center at San Antonio,
Department of Computing Resources
** There is no such thing as a Monkey-Proof Program! **
** I can prove it! **

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From ab4el.com Wed Jul 6 02:15:12 1994  
From: Michael Stein <OSYSMAS@MVS.OAC.UCLA.EDU>  
Subject: re: LM386 noise? (more)

1. I tried adding the .05 uF cap and 10 (6.2 here) ohm resister

string from the output of the LM386 to ground. No difference.  
(Might have helped if the problem was some oscillation).

> POSSIBILITY... your headphones are very efficient and you're  
> hearing the noise floor to a greater degree than you would with a  
> speaker. Solution: attenuating resistors in the output line to  
> the headphones!

Very possibly. I put a signal into the LM386 and measured a 3  
Vp-p output. The input is hard to see, but could easily be  
30 mVp-p which would match with the spec gain of 100 (20 db).

The "hiss/noise" I'm objecting to isn't visible on the output  
with my scope (the above 30 mVp-p is pushing things).

At this point I decided to check out the earphones. Ran my  
signal source into my 50 ohm step attenuator (approx handbook  
design) and hooked up the headphones to the output. With .2 Vp-p  
into the attenuator I lost the tone at -60db, it was faint at -50  
db.

I'd guess the hiss is around -50 db (+- at least 10 db) from  
.2Vpp. (I can hear 600 uVp-p?).

The headphones are Sony "dynamic stereo headphones MDR-010 (L)"  
and I have both ears wired in parallel.

I don't have specs on my headphones, but specs on other  
headphones (Sony MDR-004L) say:  
32 ohms, 96 dB/mW

I've learned a lot -- I don't see using a LM386 to drive  
headphones for QRP -- too noisy (or too much wasted power if I  
put attenuating resistors in the output line).

PS: Right after/during all this headphone testing, I was unable  
to hear the same low signal levels. Have to do something  
about blocking loud sounds when using headphones...

From ab4el.com Tue Jul 5 17:08:54 1994  
From: janderson@polycom.com  
Subject: Looking for Heathkit manual

I picked up a Heathkit IP-27 power supply at a local  
swapmeet over the weekend - it seems to work fine, but there have  
been some mods made.

I'm looking for a manual (or copy). Can anyone help me out?

Thanks,

- Jeff, WA6AHL

From ab4el.com Mon Jul 4 15:06:17 1994  
From: lhalliday@creo.bc.ca  
Subject: Lucking out at the surplus store

I happened to be rooting through the back room at RP Electronics in Vancouver Saturday, and happened across some wonderful goodies...

They had a box of bags of parts (OEM quantities), most of which were things I couldn't use in such quantities, like 10 uF electrolytics. No .1 or .01 uF bypass capacitors. What I \*did\* find, though, was a box full of zener and other diodes, 7808 voltage regulators, IF can transformers (yellow, green and white cores), miscellaneous T0-92 transistors, and what may be some varactor diodes. Another box was full of crystals - about a dozen each of 2.16MHz, 2.25MHz, and a handful of other values. I also found a bag of \*two hundred\* 3.6864MHz crystals. Thirteen bucks for the whole works.

Needless to say, I dug out all my W7ZOI references on crystal filter construction that night...time to warm up the frequency counter!

BTW - a question for our U.K. friends - are there any events happening in the U.K. the first week of September that a visiting ham would want to know about? I'll be based in the south east, but wouldn't mind an excuse to travel.

73 from Burnaby,  
laura VE7LDH who needs to get her paperwork to SSL \*fast\*

From ab4el.com Tue Jul 5 16:48:06 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: MC3362 tuning range

Hi,

Ok, I know I've been posting a lot of mail but I'm curious :) While looking back in the archives I noted that someone mentioned that one of the problems with the Gary Breed was the limited tuning range, 48 kHz to be precise

and I have personally confirmed this with the design given in the ARRL Handbook for 20M. While pondering over this and going through the data sheet for the MC3362 I noticed that the internal varicap diode is actually a back-to-back varicap placed across pins 21-22. I thus wondered if it was possible to extend the range of the Breed VFO by placing another similar back-to-back varicap across pins 21-22 (the LC tank) and biased it with the voltage at pin 23. Will there be any problems with this scheme? If not, why hasn't anyone done it yet? Tks. I most likely will base my next RX on the MC3362 so I really want to know.

73,  
Daniel

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| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
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From ab4el.com Tue Jul 5 17:39:23 1994  
Subject: Re: MC3362 tuning range  
From: "John F. Woods" <jfw@ksr.com>

You probably don't want to put a "similar" varicap across the tank; you'd want a varicap with a much higher Cmax/Cmin ratio, to make up for the modest ratio of the builtin varicap. It would also need to have a Cmax at least a few times larger than the builtin one. Other than that, I don't think there's an obvious reason why it won't work, though the more capacitance you have in varicaps, the less stable the result will be there is a Moto application note about compensating for varicap temperature dependance, but I can't find it).

From ab4el.com Wed Jul 6 09:29:41 1994  
From: msdooley@rockdal.aud.alcatel.com (Michael S. Dooley)  
Subject: Meeting other QRPers

Gang,

Well, finally got time to send this in. I was in San Jose a couple weeks ago and got the chance to meet, and have dinner with, Dave (NN1G) and Jeff (WA6AHL). The invite came via the QRP Mailing list from Jeff. We went to one of those microbrewerys for dinner. Especially enjoyed the waiters description (when asked by Dave) of the taste of the various types of beer available... "beery" ;-) ... Anyway, I had a great time talking about radios and all with them and appreciate the invite from Jeff. 73s all!  
Mike KE4PC

From ab4el.com Tue Jul 5 15:52:32 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Mini Iambic



Hi Gang,

Just some info. I've talked it over with my friend 9V1ZH who helped me make some of the boards and he has agreed that the boards, although should work, are not up to par and this really gets me. So now I have a whole bunch of mini Iambic which I might send out if you will cover postage. I will absorb the material costs. More info to follow.

73,  
Daniel

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+-----+-----+
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From ab4el.com Thu Jul 7 02:20:12 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Mini Keyer

To those sending money for the board, NO US DOLLAR CHECKS please. Very difficult to cash them at my bank. Cash would be fine, or parts. Like MRF476 or the UC3909 or something which is used for the Gell Cell charger. Toroids are fine too. So on and so forth.

The money is not a problem, especially after seeing how K5F0 absorbs a lot of the cost for publishing the newsletter. I guess I ought to do my little bit too.

73,  
Daniel

BTW, where can I get the chips for the Super SCAF Jr. design found in the QRP Classics?

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| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
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From ab4el.com Sat Jul 2 18:13:22 1994  
From: NYOUNG@DESIRE.WRIGHT.EDU  
Subject: More Old QRP Stories &c.

I just survived a week-long writing workshop and thought that

I should rest my mind by reading back issues of SPRAT. All 34 of 'em. So here's some questions and comments and stuff.

1. There's a tiny little key pictured on page 18 of SPRAT #53. Anyone know who made that and if similar little keys are available? I would think that a lot of the dyed-in-the-wool QRPers would like to have one like it. I remember seeing the little key at a Dayton Hamvention a couple years back. Neat stuff, these pocket radios.

2. There's a picture on the cover of SPRAT #73 that shows a book called "The Joy of QRP." Anybody know where that's from and if it might still be available? Which brings up the question: Who is the US representative that can sell me a couple G-QRP publications. I always have misdirected priorities when I'm at Dayton and hanging around in QRP Corner. I know that I could have bought that book then, but who worries about books when I can worry about getting a couple meg of memory cheap.

3

3. Whatever happened to the little magazine "The Milliwatt"? And what's this QRPp that I keep hearing about? Is that a magazine too? Are there really people on Mars? Should I call my cat in when it rains? Do I ask too many questions?

4. While I was poking around the shack, I realized that I haven't had a QRO contact in weeks. Maybe that's why I'm having so much fun. If conditions are good, I am on the air. If they're mediocre, I'm on the air. If they're poor, I read a bunch of stuff and then I ask a lot of questions. Funny how that works out.

CU en las bandas, amigos.

Nils  
WB8IJN

From ab4el.com Sat Jul 2 21:45:45 1994  
From: Tom Kerns <tkerns@seaccd.ctc.edu>  
Subject: Re: More Old QRP Stories &c.

> 1. There's a tiny little key pictured on page 18 of SPRAT #53.  
> Anyone know who made that and if similar little keys are available?  
> I would think that a lot of the dyed-in-the-wool QRPers would  
> like to have one like it.

Boy, I'd sure be interested in such a cool little key. I'll await

someone's response.

- Tom

Dr Tom Kerns, Professor of Philosophy  
North Seattle Community College  
9600 College Way North  
Seattle, WA 98103  
email: tkerns@seaccd.ctc.edu  
voice/voicemail: (206) 528-3827  
FAX: (206) 527-3734  
Amateur radio callsign: AA7ZG  
Packet: AA7ZG @N7DUO.WA.USA.NA

Fly Fishing is The Answer.

From ab4el.com Tue Jul 5 21:17:56 1994  
From: GroverC@gvgadg.gvg.tek.com (Grover Cleveland)  
Subject: Re: More Old QRP Stories &c.

Can you describe the tiny key? I don't receive SPRAT.  
I did get one of the tiny keys from South Africa and it's perfect  
(I say again PERFECT) for portable operation. It is interesting that  
the same design appears in a photo of a "Maquis" radio set from WWII.

\*\*\*\*\*  
Grover Cleveland                      Instructional Designer, The Grass Valley Group, Inc.  
Internet: groverc@gvgadg.gvg.tek.com      Radio: WT6P@KE6LW.#NOCAL.ca.us.na  
Voice: (916) 478-3153                      DoD:7388                      Fax: (916) 478-3831  
\*\*\*\*\*

From ab4el.com Tue Jul 5 20:37:31 1994  
From: NYOUNG@DESIRE.WRIGHT.EDU  
Subject: More Ramblings about QRP

A friend of mine who recently passed away once said that  
he wanted to research the connection between children of  
alcoholics and heavy metal addition. He was speaking of  
the tendency, as he had noticed it, for children of alcoholics  
to get into collecting or working on or obsessing over items  
in the popular culture that were bulky, heavy and usually made  
of cast iron. He included steam railroad buffs, hobby machinists,  
private press proprietors and letter press printing aficionados.  
He should have included QRP crazies.

I just got the OHR catalog. Man, this stuff is about as  
hard to pass up on as the special hand-finished casting of  
Trocadero Ornate that I saw in the Sterling Type Foundry

catalog a couple days ago. How do we do it? Not only were there all these interesting kits, but there deals on all the stuff that a collector of 10-pound rolls of solder would like to have. Here it is, just a drop in the cool waters of a pond from the summer solstice and now I have to make decisions about what sort of mixer I want to put in my dream radio project, let alone try to figure out how I'm going to pay for it. And I still have to fix the jam in the first elevator on my Intertype caster. I have to do that so I can set the type for the three chapbooks that I want to print over the Christmas Holidays.

And speaking of Christmas, should I buy now and hide the purchase from myself (and the watchful eyes of my wife/accountant), or should I just drop hints while I'm setting the type for the family Christmas card. I have to start on the cards now or I won't have them done until June of next year. I mean, I need some lead time here, what with all these QRP projects staring me in the face. And what about the CSP project that's in #69 of SPRAT? Should I look around for that, or should I just get the SUDDEN receiver kit? Decisions, decisions.

Why just the other day I discovered that the little 3x5 circuit board that I thought didn't work actually did. And then I found the schematic for it. Where have I been all these years? It was one of those "Two-fer" transmitters that the QRP ARCI had back about 7 years ago. Where have I been? Well, okay, I overhaul a Model F Intertype machine that some had junked. And I did trade off all those matrices that went with it to get a Model C that works. With 3 magazines, too. And I moved Dad's trusty ol' 12x18 Chandler & Price platen press into the garage. Did you know those things were almost a ton, crated for shipment? Moved across the garage floor on steel pipe stock and 2x4s. Still have my fingers. Well, I need 'em, see. I need 'em to use the 3 different straight keys, two different keyer paddles and the japanese bug that someone dropped and broke into a couple pieces. Some day I'll find someone with a little machine shop in their garage and have 'em turn me out the parts.

So maybe Bob should have included us radio fanatics. I mean, there isn't much difference between type metal and solder. One's got antimony and the other's got a rosin core. They both melt at about the same temperature. Okay, solder is colder melting, but it's still hot. And then there's all that antenna hardware. Yeah, that's heavy metal too, ain't it?

73/72

Nils R. B. Young

WB8IJN and Proprietor of

The Tagalong Press

Founded in 1946 by George Bull Young,

Printer, Journalist & son of an alcoholic.

We all manage to get by.

From ab4el.com Sun Jul 3 02:33:29 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: NN1G question

Hi Gang,

Just wanted to check something. I noticed 2 things about the NN1G (Mk II) which puzzled me. I noticed that C9 on the RX board was not specified in the component list nor provided with Dan's kit. Looking at the design however, I suspect that this should be there and has the same value as C5. This is of course inferred from the expected symmetry of the crystal filter. Can anyone confirm this for me.

I also noticed that on the RX board, U3 (NE602AN) should have a 47 pF from pin 7 to ground but the tracks for the board appears to run the 47 pF from pin 7 of U3 to pin 1 of U2. I have since changed the tracks to reflect the schematics but was wondering if anyone else noticed this. Can anyone please fill me in on any other corrections to this board.

I am experiencing WWV breakthrough, what should I do?

73,  
Daniel

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From ab4el.com Sun Jul 3 09:10:05 1994  
Subject: Re: NN1G question  
From: "John F. Woods" <jfw@ksr.com>

> I also noticed that on the RX board, U3 (NE602AN) should have a 47 pF  
> from pin 7 to ground but the tracks for the board appears to run the 47 pF from  
> pin 7 of U3 to pin 1 of U2. I have since changed the tracks to reflect the  
> schematics but was wondering if anyone else noticed this. Can anyone please  
> fill me in on any other corrections to this board.

I don't have the schematic handy, but if it is what I think it is, that capacitor really is grounded: if there is a .01 or .1 cap from pin 1 to ground, that's (almost) as good as grounded for RF. Wiring directly to ground

won't hurt, of course, unless the wire run is longer than the other path.

> I am experiencing WWV breakthrough, what should I do?

Put it in a metal box (that solved it for me). If it isn't in one, make sure the input filters are tuned right (did you remember to remove the capacitors from the ^&#%\$# IF transformers?). I had a devil of a time tuning up the transmitter until I realized that I'd missed one...

From ab4el.com Tue Jul 5 21:52:31 1994

From: pdcd!rmulvey%syspro.paychex.com@uu6.psi.com

Subject: Norcal 40 camping experience

Hi all:

I just wanted to report on the very positive experience I had with my Norcal 40 over the holiday weekend.

I couldn't make Field Day because of work-pressures, but managed to take a canoe trip up to the Stillwater Lake area of the Adirondack mountains. I set up a 40 meter dipole ( zip cord + 50 feet of RG-58 ) about 60 feet off the ground, and directly over a small inlet on the lake. I wish I could could get nearly as good a location at home. :-)

I made several QSO's the first night, all of which exceeded 1000 miles on approximately 1.5 watts. The thing that really made me happy was that this was in the Novice band, and I was getting absolutely hammered by SWBC stations. :-) I would have racked up some more QSO's, but I got stomped on several times by other stations and couldn't complete the contact. ( Well, that and the fact that the non-amateur radio people I was with kept asking me to tell them when I made contact with the Mother Ship... :-) In any case, all of the QSO's were made from \*me\* calling CQ - not proper QRP operating procedure, but hey, it worked. :-)

The second day I made several QSO's in the afternoon, and received a couple of unsolicited comments about the quality and strength of my signal. There's also one person who commented that he's going to join Norcal, since they seem to produce such nice kits. Do I get a finder's fee for that? ;-)

- Rich

From ab4el.com Wed Jul 6 01:30:38 1994

From: pdcd!rmulvey%syspro.paychex.com@uu6.psi.com

Subject: Norcal 40 camping experience

Hi all:

I just wanted to report on the very positive experience I had with my Norcal 40 over the holiday weekend.

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- Rich

From ab4el.com Tue Jul 5 12:04:44 1994  
From: adams@chuck.dallas.sgi.com (Chuck Adams)  
Subject: OK QRP Group

Gang,

I posted the address in response to someone's query, but here are the particulars for the Oklahoma QRP Group:

The Oklahoma QRP Group is an unaffiliated, independent group of like-minded ham radio operators interested in soley in the perpetuation and perfection of their avocation. Its memebbers are distinguished by their fellowship, their courteous operating procedures, and a common desire to preserve the true amateur spirit.

There are no dues. However, we do accept donations of ten dollars a year for postage, copying, and minor production costs for the

newsletter. If you are not currently receiving the OK QRP Group Newsletter send your information.

Don Kelly, Editor  
703 West 8th St  
Edmond, OK 73003

Name\_\_\_\_\_ Call\_\_\_\_\_

Address\_\_\_\_\_ City\_\_\_\_\_

State\_\_\_\_\_ ZIP\_\_\_\_\_

hope this helps.

dit dit

p.s. the newsletter is done quarterly and runs about 22 pages 8.5x11" format

Chuck Adams K5FO CP-60  
adams@sgi.com

From ab4el.com Tue Jul 5 14:57:40 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Performance comparisons

Hi Gang,

I need some info here, concerning receiver designs. I am trying to decide what kind of receiver design to adopt in building a moderately high performance receiver. What I'd like to know is the comparison between receiver types. In particular I would like to know what a Gilbert Cell type mixer is and what their strengths and weaknesses are. I know the NE602 and MC3362 utilizes Gilbert Cell mixers but I hope to get a bit more technical stuffs on them.

I am also interested in the comparison between receivers built around the NE602 and those around the MC3362. The MC3362 (used in the Gary Breed) looks attractive because of the potentially compact design. The use of varicap means cheaper in terms of cost, and since it contains 2 mixers, it essentially replaces two NE602s. However I do not know enough to make a proper evaluation. I have the spec sheets but they are not too helpful. I appreciate any feedback from people in the know, also from people who are using both the Breed and the



NN1G or the Norcal40 (or any NE602 based rx) and give me some rough idea what they feel about the two designs.

What about the VFO stability of the MC3362, how does this compare with the NN1G for example. Next, in the NN1G, I noticed the presence of some strong birdies and do not know if this is inherent to the design or due to my own construction fault. Does the Gary Breed design exhibit any birdies?

I am currently thinking of a design that goes like this:-

1. RF Bandpass followed by MAR-6 RF pre-amp.
2. feeds into 1:4 transformer before MC3362
3. The IF filter for the 3362 consists 4-crystal Cohn, MC1350 amp, single pole filter.
4. Back into the MC3362 for product detector
5. Audio pre-amp and AGC derivation feeding back into the MC1350 for AGC
6. Switchable audio filter and audio amplifier.

Can anyone comment on the brief overview above? Tks, I hope to come up with a compact design to use with my compact frequency counter. It will have RIT but no S-meter. The TX board comes later. For the tuning, I intend to use a multi-turn pot to eliminate the need for a fine-tune like in the Gary Breed.

Regarding the gain blocks, if I had to choose between Front-End RF preamp and IF amplification, which should I go for?

Would really appreciate any help. Tks.

73,  
Daniel  
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From ab4el.com Tue Jul 5 21:40:24 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: Performance comparisons

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Would really appreciate any help. Tks.

73,  
Daniel

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From ab4el.com Wed Jul 6 12:00:48 1994  
From: rohrwerk@holonet.net

Subject: Performance comparisons

On 07-06-94 pandora!daniel@Think.COM wrote to pandora!qrp@Think.COM:

> I need some info here, concerning receiver designs. I am trying to  
> decide what kind of receiver design to adopt in building a moderately  
> high performance receiver. What I'd like to know is the comparison  
> between receiver types. In particular I would like to know what a  
> Gilbert Cell type mixer is and what their strengths and weaknesses  
> are. I know the NE602 and MC3362 utilizes Gilbert Cell mixers but I  
> hope to get a bit more technical stuffs on them.

Don't know about the MC3362, but the NE602 is not a particularly high performance chip. It's nice because it has gain as a mixer, and has nice built-in oscillators, but it is not particularly immune to overload. At HF, on a crowded band, you'll be disappointed.

Stick with good old diode double-balanced mixers, and solidly build discrete component VFOs.

My favorite is the Campbell R1 (direct conversion) and R2 (phasing direct conversion). They are worth the work, and now Kanga US (N8ET@delphi.com) is offering kits. (You have to come up with your own VFO and input filter/preamp)

> The use of varicap means cheaper in terms of cost,

And performance too. If you want a "moderately high performance" RX, don't play with that stuff. If you want a compact, relatively inexpensive unit, you might want to consider that approach.

> I am currently thinking of a design that goes like this:-  
>  
> 1. RF Bandpass followed by MAR-6 RF pre-amp.

The gain of the MAR-6 is a bit high. Use some attenuation at the output (and/or input) to reduce gain to about 10 dB. I use the MAR-6 at full tilt with my R2, and it works OK, but I hear some overload occasionally.

If you use one of those mixers, ask yourself if the noise figure/gain is already high enough for HF use. Noise figures of 6 dB or greater are entirely acceptable. The MAR-6's 3 dB noise figure is excellent for HF, but again don't overload your succeeding stages. It's very likely your preamp will be a bit much for such chips.

> Regarding the gain blocks, if I had to choose between  
> Front-End RF preamp and IF amplification, which should I go for?

It's a matter of balancing the two, not either/or. Never overdo the RF amp

gain, as mentioned above.

> 73, Daniel

```
* John Seboldt...Mpls, MN... :      The joint chiefs of staff:      *
| Amateur radio K0JD...      : General Confusion and Major Error |
* rohrwerk@holonet.net      :      ("Car Talk")          *
```

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Wed Jul 6 16:28:44 1994  
From: dh@deneb.csustan.edu (Doug Hendricks)  
Subject: PW Back issues.

Does anyone on the net have the August and November Practical Wireless back issues? I need to get a photocopy of an article. 72, Doug

From ab4el.com Tue Jul 5 19:00:56 1994  
From: Craig LaBarge <74740.3166@compuserve.com>  
Subject: QRP AFIELD DETAILS??

In a posting here a while back, an event called (I think) "QRP Afield" was mentioned. Can anyone fill me in on the details of this event?

Sure would be grateful.

Thanks & 73/72,

Craig WB3GCK

```
=====
| Craig LaBarge WB3GCK/QRP          |           |
| Email: 74740.3166@CompuServe.com  | Just say no |
| Packet: WB3GCK@N3DPU.#EPA.PA.USA.NA | to QRO!    |
| CW: 30 & 40 Meters                |           |
=====
```

From ab4el.com Wed Jul 6 02:55:51 1994  
From: adams@chuck.dallas.sgi.com (Chuck Adams)  
Subject: QRP AFIELD-1994

QRP AFIELD - 1994

Entry Form

Name\_\_\_\_\_ Call\_\_\_\_\_

Address\_\_\_\_\_QRP NE#\_\_\_\_\_

\_\_\_\_\_

Total Number of Contacts \_\_\_\_\_

Points per Contact (1) X \_\_\_\_\_

Total = \_\_\_\_\_

Number of Multipliers Worked (2) X \_\_\_\_\_

Final Score = \_\_\_\_\_

(1) Points per Contact

1 point for each contact from a permanent location using high power QRP

2 points for each contact from a permanent location using low power QRP

4 points for each contact from a field location using high power QRP

8 points for each contact from a field location using low power QRP

NOTE: All contest contacts MUST be made using the same location and power output.

(2) Multipliers: Each State/Province/Country worked counts for one point. Multipliers may be counted only once regardless of band worked.

Transmitter/Xceiver\_\_\_\_\_ Power Output\_\_\_\_\_

Receiver\_\_\_\_\_ Power Source\_\_\_\_\_

Antenna\_\_\_\_\_

Location\_\_\_\_\_

Comments\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Submit Logs and Dupe Sheets to: Chester (Chet) Bowles, AA1EX  
RFD 2, Box 335L  
Sharon, NH 03458

P.S. Please include photographs if you wish. We will put together  
a collage for display at flea markets and club presentations.  
Pictures may also be used in publications, so please make sure your  
name and call are written on the back of the picture.

\_\_\_\_\_

#### QRP AFIELD-1994

QRP AFIELD-1994 is sponsored by the QRP Club of New England and  
is designed to encourage QRP enthusiasts to field-test their radio  
equipment using temporary antennas and non-commercial power sources.

Date/Time - Saturday, September 17, 1994 from 1600Z to 2200Z

Exchange - QRP-NE members RST,State/Province/Country, QRP-NE #  
Non-members RST,State/Province/Country, Power Output

#### Definitions -

Permanent Location Any location using commercial power AND/OR permanently  
installed antennas.

Field Location Any location using battery/solar/natural power AND  
temporary antennas.

Low Power QRP Less than one watt output.

High Power QRP 1 to 5 watts output.

#### Scoring (CW Only)

1 point for each contact from a permanent location using high power QRP  
2 points for each contact from a permanent location using low power QRP  
4 points for each contact from a field location using high power QRP

8 points for each contact from a field location using low power QRP

NOTE: All contest contacts MUST be made using the same location and power output.

#### Multipliers

Each state/province/country worked counts for one point. Multipliers may be counted only once regardless of band worked.

#### Awards and REsults

Certificates will be awarded to the ten stations with the highest point totals. Complete results will be printed in 72 magazine. Results will be also available by enclosing a #10 SASE with the contest submission.

#### Address

Chester (Chet) Bowles, AA1EX  
RFD 2, Box 335L  
Sharon, NH 03458

-----  
Don't shoot me, I'm only the messenger: K5F0

dit dit

Chuck Adams K5F0 CP-60

adams@sgi.com

From ab4el.com Mon Jul 4 15:41:41 1994

From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)

Subject: QRP library comments

Some additional comments on some of the books on the recent QRPers library list put out by Jim Johns, KA0IQT--

>Ferromagnetic Core Design & Application Handbook, M. F. Doug DeMaw,  
>Prentice Hall 1981, 256 pages Hard Cover. Core and inductor data,  
>information and applications.

Comment--book now out of print for a while. I saw a copy once but did not want to pay the \$26 for it--I thought it was too expensive for the contents, priced more for the college textbook or professional engineering crowd, not for the homebrewer or amateur. (While it may have over 200 pages, it's not a large book--it was

something like 6 X 9".) Final price before it went out of print several years later was somewhere over \$50! Doug DeMaw said in CQ magazine a year or two ago that he had given permission to Amidon to reprint it. In a private letter, he said he had not heard from them since he gave permission. I wrote to Amidon last year, asking about it, but never received a reply so it may be gone for good, or waiting for someone else to decide to republish it.

>History of QRP in the U.S. 1924-1960, Adrian Weiss WORSP, Milliwatt  
>Books 1987, 199 pages Soft Cover. One man's view of the history of  
>QRP.

Comments--derived mainly from the pages of old QSTs, I believe, this is a truly fascinating book on the subject. Now if we could just get Ade (or someone else) to write a history of QRP from 1960 to present... Availability unknown, but may still be available from Ade.

>Introduction to Radio Frequency Design, Wes Hayward, Prentice-Hall  
>1982, 383 pages Hard Cover. Good technical text but with only a few  
>practical circuits.

Comments--for the technically inclined homebrewer, this is a good book by one of the masters (he also co-authored the QRPers technical bible, Solid State Design for the Radio Amateur). Current availability unknown. Probably priced for the textbook/professional market. This one is high on my list of "books that are good enough to risk stealing from someones library."

>The Joy of QRP: Strategy for Success, Adrian Weiss, Milliwatt Books  
>1984, 151 pages Soft Cover. Chatty overview of QRP, oriented more to  
>operation than technical, but does include several projects.

Comments: Out of print for quite a few years--it took about 2 years for it to sell out, and is considered by many to be a classic. Requests for a copy appear from time to time in the QRP journals and on the packet radio BBS system. Some QRPers who do have a copy keep it under lock and key when other QRPers visit them, and only loan it out if the recipient posts his home and car as collateral. (Some of the references to rigs are quite dated; most of the tube type rigs mentioned are probably virtually unobtainable. Most of the book is filled with a great deal of good QRP info.) Note--Ade gets extra points for correctly spelling my last name in both of his books. Ade himself recently put out a message on the QRP forum (June 1994) saying that he has no objections to anyone copying it for a friend.

>QRP Classics, Bob Schetgen KU7G editor, ARRL 1990, 274 pages Soft  
>Cover. Reprints of QRP articles from QST. Good compendium. Missing



>some "classic" designs (The original W7EL design for one).

Comments: As I recall, this received some mixed reviews in the QRP press. In the second printing, the W7EL rig was inserted with surgical precision; they sliced out two articles and moved them to the rear of the book, and the W7EL fit right in the open spot without even disturbing the page numbering.

>The HW-8 Handbook 1st edition, compiled and edited by Michael Bryce  
>WB8VGE, 1991, 56 pages Soft Cover. Contains tips and mods for the  
>Heathkit HW-7, HW-8 and HW-9 QRP transceivers. Reprinted several  
>times, this classic is still in great demand.

Comments: The first two incarnations were known as the Hotwater Handbook; originally done by W5QJM, updated by WB8VGE. The third incarnation was changed to "HW-8 Handbook" due to confusion over the title "Hotwater Handbook;" many people thought it also referred to the Heath "Hotwater" series, such as HW-101, HW-12/22/32, and many others, all of which were often called "HotWater" rigs. Third incarnation sold out fairly fast, recently reprinted by WB8VGE. Does not contain any new info since the first printing, although some has appeared in various places.

>RF Circuit Design, Chris Bowick, Howard Sams & Co. 1982, 176 pages  
>Soft Cover. This book, once out of print, offers insight into RF  
>design including the use of Smith Charts. Not for the beginner it  
>offers valuable information for the intermediate to advanced  
>designer.

Comments: I reviewed this in the QRP Quarterly recently. Definitely not for the beginner, definitely of interest to the more technically inclined ham. Once again available; two chapters were excerpted in Ham Radio magazine quite a few years ago.

Another good book not on Jims list: The Joy of Electronics by Horowitz and Hill. Priced somewhere in the \$70 range, and well worth it--heavy, lots of pages. I have a copy on my desk at work, provided by the company, (Also available: student workbook; I've seen it but didn't have the chance to open it; in the \$25 class, I think.) Lots of good info on a wide variety of electronics topics, usable by the relative beginner as well as more advanced. Not heavy into math. Get the second printing if possible--updated from the first one. Has sold over 125,000 copies and widely held in high regard. Readable, easy to understand; includes examples of what NOT to do.

73 and Queue Our Pea DE WA8MCQ

--

Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org

E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org  
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA  
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Wed Jul 6 10:30:42 1994  
Subject: Re: QRP library comments  
From: Daniel C Halbert <halbert@world.std.com>

WA8MCQ writes:

>Another good book not on Jims list: The Joy of Electronics by  
>Horowitz and Hill. Priced somewhere in the \$70 range, and well worth  
>it--heavy, lots of pages. I have a copy on my desk at work, provided  
>by the company, (Also available: student workbook; I've seen it but  
>didn't have the chance to open it; in the \$25 class, I think.) ...

Er, I believe it's the "Art of Electronics". It is a great book. The  
student workbook is really great, too - it goes through some designs  
and calculations step by step, includes details not in the book, and  
did a lot to increase my understanding.

Dan, KB1RT

From ab4el.com Thu Jul 7 18:01:13 1994  
From: g3rjv@gqrp.demon.co.uk (George Dobbs G3RJV)  
Subject: Re: QRP library comments

In message <199407061428.AA15134@world.std.com> Daniel C Halbert writes:

> WA8MCQ writes:

> >Another good book not on Jims list: The Joy of Electronics by  
> >Horowitz and Hill. Priced somewhere in the \$70 range, and well worth  
> >it--heavy, lots of pages. I have a copy on my desk at work, provided  
> >by the company, (Also available: student workbook; I've seen it but  
> >didn't have the chance to open it; in the \$25 class, I think.) ...

>

> Er, I believe it's the "Art of Electronics". It is a great book. The  
> student workbook is really great, too - it goes through some designs  
> and calculations step by step, includes details not in the book, and  
> did a lot to increase my understanding.

>

> Dan, KB1RT

>

MY FAVOURITE BOOK ON ELECTRONICS.....

--

George Dobbs G3RJV  
G-QRP Club

"It is vain to do with more,  
what can be done with less."

----- William of Occam (1290-1350)

From ab4el.com Wed Jul 6 09:52:11 1994  
From: mvjfm@mvubr.att.com (James M Fitton +1 508 960 2577)  
Subject: QRP-AFIELD

Thanks K5F0 for posting QRP-AFIELD rules, and especially  
for donating/sponsoring the QRP-AFIELD trophy.

Helpful information:

The rules were written to encourage HB, fun, participation,  
and to simplify scoring.

You can work any or all HF bands that you desire,  
but use of the standard QRP frequencies would be a wise choice.

A car battery, by any other name is still a battery !

Multiple operators and transmitters are much more fun than  
a solo effort.

But: Only 1 transmitter on the air at one time, per station, per entry.  
(2 transmitters on air at same time = 2 stations = 2 entries)

73/72 Jim Fitton, W1FMR QRP-NE mvjfm@mvubr.att.com

From ab4el.com Tue Jul 5 20:55:09 1994  
From: ad7i@hogpa.ho.att.com (Paul Benjamin Newland)  
Subject: Re: qrp-digest V1 #29

please cancel my subscription to the qrp-digest. it's interesting  
stuff but I just don't have time to read it.

thanks,

paul newland, ad7i

From ab4el.com Tue Jul 5 20:38:57 1994  
From: NYOUNG@DESIRE.WRIGHT.EDU  
Subject: Questions about SPRAT & almost no answers

I got a piece of email from someone... no a couple  
people, now that I think of it, asking me about SPRAT.  
They wanted to know how much it cost and who to contact.  
Well, that'd be easy except that the last issue of

SPRAT that I have (yeah, I found the last one, #78, Spring '94) carried an obit about Luke Dodds, W5HKA, who, until his death, was the contact person for the publisher, the G-QRP club. So how do I answer the questions?

I turn it loose to the list readership, that's what I do. But I can say that SPRAT is probably the best "little magazine" on QRP since the glorious days of "The Milliwatt." It costs \$12 a year for us seditious inhabitants of the rebel colonies and that money also pays for membership in the G-QRP Club. It's worth it. It's worth it, trust me. Discuss among yourselves. I'm outta here.

Nils R. B. Young  
WB8IJN & Caudillo of  
The Grinnin' Turkey Ranch,  
Founded in 1974 by two really  
weird people, one of whom tolerates  
the irrational devotion to radio that  
marks the other. Go figure. If we were  
in Argentina, it'd be "La Estancia de los  
Guajalotes Sonrientes." Adios, che!

From ab4el.com Sat Jul 2 10:19:19 1994  
From: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org (Mike Czuhajewski)  
Subject: Re Archives

Thanks to all who gave me info on finding the QRP archives on think.com. (I love the Unix system and its command structure. But then I also love sitting in the middle of mosquito infected swamps all night long. One of the engineers at work responded to my comments about Unix by pointing out that Unix begat CPM and CPM begat DOS, and that says it all!) I've been able to get right down to the bottom of the directory tree and see all the individual goodies; I can't do any downloading yet due to unfamiliarity with the terminal software, but I'm almost home. Thanks again. 73 and Queue Our Pea DE WA8MCQ

--

Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org  
E-Mail: Mike.Czuhajewski%hambbs@wb3ffv.ampr.org  
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA  
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From ab4el.com Tue Jul 5 10:50:28 1994  
From: janderson@polycom.com  
Subject: Re: Re: Happy "G5RV" antenna

John Sebolt wrote:

..You might get by with just putting the balun in front of almost any tuner, but keeping ground floating. Zack Lau's "QRP Transmatch for Balanced Lines" in Qrp Classics (and the Handbook?) is just a regular L net with the balun in front, and floating from ground. Something doesn't feel quite right about that, if you REALLY want a true balanced line, but it's something to try.

\*\*\*\*\*

I believe that there is a similar article in one of the antenna compendiums that goes through a bit more analysis (than Lau's article) of this type of design (balun in front of unbalanced L-network). Although the L-network looks unbalanced, the balun forces it to be balanced - and using one inductor, rather than two, greatly simplifies the design.

I don't know if this really works - in a quick read-thru of the article it seemed that something was missed in the theoretical discussion - I really should go back and dig into it more deeply. But I agree with John, give it a try, it is a MUCH simpler design.

- Jeff, WA6AHL

From ab4el.com Wed Jul 6 13:22:58 1994  
From: Clark Fishman (FSAC-FCD) <cfishman@PICA.ARMY.MIL>  
Subject: Receiver design

Daniel Wee is looking for info on high quality receiver design....

Here is my two sense.... 1. Keep the gain before the first mixer as low as possible....like nothing....the Drake TR7 has a receiver with no RF amp and it works just fine.

2. Line up for good performance:

Bandpass filter driving a double balanced diode mixer, like a SRA1-h,  
terminate the IF port in a 50 ohm diplexer follow this with a 16 db  
gain amp driving a 6 db attenuator...the ouput of the attenuator  
goes to the crystal filter ...from the filter to a MC1350  
IF amp driving a SBL1 as a product detector.....add AGC  
as required...

The ATLAS 210 transceiver uses a line up similar to this and id

very quiet and has plenty of sensitivity.....

My opinion avter studing the service manuals of many of the current radios being sold today is that they have lot's

of frequency conversions and still have less then excellent receiver performance.

Last thought: Put a super SCAF audio filter after the SBL1 product detector and if you use audio derived AGC use the audio output of the SCAF for the AGC information..

Any Questions: just ask...the only stupid question

is the one not asked

73 and stay away from 602's

Clark Fishman

WA2UNN cfishman@pica.army.mil

From ab4el.com Fri Jul 8 11:23:34 1994  
From: jason@persoft.persoft.com (Jason Penn)  
Subject: Revised Tale of My NorCal 40

(This is a revised version of my posting from yesterday. As many of on list probably knew before I did, I was wrong about some rather important aspects regarding my NorCal 40's alignment. I am reminded of the quote, "I thought I was wrong once, but I was mistaken".

Greetings to the QRP mailing list.

I just finished the assembly of my NorCal 40 Partial Kit. I did the bulk of the soldering and inductor winding over the July 4 weekend. The only snag I ran across was a dead transmitter section. After some signal tracing and head scratching I found a tiny solder bridge shorting the VFO to ground near the input of the xmit mixer. It puts out 3 watts according to my 'scope or 2.5 according to my questionable old Swan watt meter.

I did a few things different than specified, but not by choice. Since the MVAM108 varactors have not come in I went to the local electronic

"odds-and-ends" dealer (mostly "odds" :-)).

He dug up a box labeled "varactors" and told me they were something like 42 pF at 4.1 volts. He gave me one. In addition, Mouser was out of stock on the 39 pF mica cap in the VFO, so I used a 33 pF mica cap. The VFO was about 200kHz low. I took two turns off L9 for a total of 57 turns. C50 varied the VFO over a range of 260 kHz (wow! the manual says it should vary about 75 kHz) and the tuning pot covers a range of 68 kHz (which would seem about right). I set it up to tune from 7.082 Mhz to 7.150 Mhz. Oh yeah, I used 4.9152 MHz crystals because that's what I found cheap at Dayton. I figured a 200 Hz change in the IF wouldn't matter.

It turns out that the above tuning ranges are hogwash. I (initially) used my HF rig to "listen" for the tx/rx signals. I accidentally fell upon what must have been the third harmonic of the VFO. The third harmonic explains the ridiculously large apparent tuning range. A quick rewind of L9 with 62 turns got it down to 7.108 MHz with a high end of 7.131 for a range of 23 kHz. I verified these frequencies with the big HF rig \*and\* a frequency counter. By the way, an oscilloscope probe makes a nice frequency counter probe. Just be careful that the signals you connect to the counter won't fry it. My counter isn't very sensitive and will take up to a few volts. Your mileage may definitely vary.

I welcome anyone's comments on the use of the 33 pF cap and the unknown varactor. The varactor looks like a glass diode with several funny bumps, not a 2 leaded plastic transistor pack. I think the box they came from were labeled with a part number, but I didn't write it down. If it is deemed "acceptable" by Wayne, et. al., I might offer to send units to any takers on this list building NC40 partial kits. I say "might" because the local "odds-and-ends" dealer was going out of business the day I stopped in for the varactor. It is unknown if I can still get them from him or if he can still find them after his move. He is switching to strictly mail order, no retail store front and moving to a smaller place that will only hold about a third of his (then) inventory of "stuff". The MVAM108 is the hot setup, but substituting another varactor can get you started until the real thing arrives.

Now to (still) make that first NorCal 40 contact.....

73

--

Jason F. Penn N9RPT | Persoft, Inc. | jason@persoft.com  
Whenever I want to find something, it's always in the last place I look.

From ab4el.com Tue Jul 5 15:52:55 1994  
From: "W. Daniel" <pandora!daniel@Think.COM>  
Subject: RIT/XIT for Gary Breed

Hi Gang,

I noticed in my archives that QQ had published a circuit for RIT/XIT for the Gary Breed some time last year. I was wondering if anyone here would be kind enough to send me a copy of that article or the circuit diagram. Tks.

73,  
Daniel

p.s. This list is great. BTW I heard a good one from Dick Szakonyi (S & S):

Wits = 1 / Watts

: -)

--

```
+-----+-----+
| Daniel Wee | daniel%pandora@csah.com | ** Man needs more
| UUCP1.12b | daniel.wee@f516.n600.z6.fidonet.org | than a new start, he
| SNEWS 1.91 | csah.com!pandora!daniel | needs a new heart! **
+-----+-----+
```

From ab4el.com Thu Jul 7 12:18:49 1994  
From: prvalko <prvalko@vela.acs.oakland.edu>  
Subject: Seeking PowerMite 1 Help!

Hello,

I am working on restoring a basket-case PM-1. Last week I found some replacement switches for the front panel but I need to know where the wires from these switches are supposed to go.

If you have a PM-1, would you please contact me so that I may call you and talk about the wiring? I have a copy of a blueprint schematic but it's virtually unreadable.

73 =paul= wb8zjl

From ab4el.com Mon Jul 4 15:41:43 1994  
From: adams@chuck.dallas.sgi.com (Chuck Adams)  
Subject: Re: St. Louis & Okla. QRP Club Address??

OK QRP Group (OKlahoma)  
Don Kelly, Editor  
703 West 8th St.  
Edmond, OK 73003



dit dit  
Chuck Adams K5FO CP-60  
adams@sgi.com

From ab4el.com Tue Jul 5 04:13:02 1994  
From: jeffrey@math.hawaii.edu (Jeffrey Herman)  
Subject: State-wide project

Gang, I've got a great idea:

I am thinking of sending to each and every club in Hawaii a copy of the 3579 kc color burst transmitter schematic. 80M is kind of dead out here in the Pacific, but can you imagine the fun if I could generate some QRP interest in every KH6 in the state? 3579 would be a state-wide partyline.

Hopefully each club newsletter will carry the schematic.

Jeff NH6IL (I wish that were KH6IL - phooey.)

From ab4el.com Sun Jul 3 14:23:03 1994  
From: howie cahn <wb2cpu@world.std.com>  
Subject: Survey results - Ham magazines/computers

Wow!

I've gotten well over 30 (and counting) responses to the survey questions I asked a few days ago. Thanks to all who responded! The following are the results of a preliminary compilation of the data. First is a somewhat subjective summary, and then the raw data. I'll be doing a final analysis later, so, you still have time to get your vote in.

Publications - No real surprises.

QST: Just about everybody reads it (all but 3 respondents). Several people thought it's improved recently (the Rhode receiver articles were mentioned), one person complained about the League's "discriminatory advertising policy".

CQ: Read by less than half. Many said it was too contest-oriented with not enough project articles.

73: Read by about half. Some liked the construction articles but others were put off by "Wayne's ramblings".

QEX: Not too many comments. Two people would like to see a different focus of article subjects.

Communications Quarterly: Several comments about it only being a barely adequate (or not adequate) replacement for its indirect predecessor "Ham Radio". Several complained about its price but others thought it was the best of all of them in terms of technical content.

Nuts & Volts: Not too many comments.

Various QRP club magazines: Most were mentioned favorably especially (!) QRPP (confirming the thread here recently about how the Nor Cal QRP Club has grown). Similarly nice things were said about the NE QRP Club, but 72 isn't as widely read. ARCI and MI QRP don't seem to have a presence here proportional to their overall membership numbers. Others mentioned: K5FO (sorry Chuck for leaving you out of the original list), NW QRP, Okla QRP, and Colo QRP clubs.

Others magazines mentioned: The Computer Applications Journal (nee Circuit Cellar Ink) was highly recommended. others mentioned: World Radio, Electronics Now, Practical Wireless (and several other European publications), Radio Fun, RF Design (professional journal). HamBrew was only cited once, by someone who intends to let his subscription drop.

Raw numbers --

Magazine:	read by:
QST	30
73	16
CQ	13
QEX	13
Communications Qrtly	9
Nuts & Volts	9

QRPP	16
QRP Qrtly	12
72	9
T5W	9
SPRAT	7
K5FO	4
NW QRP	2
CO QRP	2

Computer Operating Systems -

To me the interesting thing was how the responses differed from the general home computer market. I think it's fair to say that, in the general market, Windows is now dominant, DOS fading, Macs have a fanatic following of about 20% of the market, and nothing else counts much. Here, Macs and UNIX based-systems are very highly over-represented. This isn't really a QRP topic so I don't want to go into it too much here, but if anyone wants to continue a discussion about O/Ss, mail me direct.



From ab4el.com Wed Jul 6 12:00:41 1994  
From: rohrwerk@holonet.net  
Subject: Toroid questions.....

On 07-05-94 WHITE@CCSUA.CTSTATEU.EDU wrote to QRP@Think.COM:

> Do the PHASING DOTS on a schematic have any significance to me as a  
> builder?

Ooooh, yes! They indicate corresponding ends of the windings in bifilar or trifilar windings so everything is in proper phase.

> And what if the inductor requires 50 turns and only about 35  
> fit on the core?

Somebody goofed. Use smaller wire or a bigger core. Smaller wire has little effect unless there's a fair amount of current. Bigger core: it will have a different permeability value. Which inductor did you have the problem with?

* John Seboldt...Mpls, MN... :	The joint chiefs of staff:	*
Amateur radio K0JD... :	General Confusion and Major Error	
* rohrwerk@holonet.net :	("Car Talk")	*

-> Alice4Mac 2.3 E QWK Eval:05Mar94

From ab4el.com Wed Jul 6 09:35:35 1994  
From: Stephen Trier <sct@po.cwru.edu>  
Subject: Re: Toroid questions.....

> Do the PHASING DOTS on a schematic have any significance to me as a builder?

Yes. While once in a while the phasing dots are overspecified, it's a good idea to always follow them if you see them. Otherwise, you might end up cancelling out the signal you're trying to get.

> And what if the inductor requires 50 turns and only about 35 fit on the  
> core?

Hmm... That means something went wrong with the winding. Are you using the right wire gauge? Are you sure it's the right size of core? Are you using real magnet wire? (Normal plastic-insulated wire is not the same. Magnet wire is insulated with a thin coat of enamel.)

Stephen

--

Stephen Trier                    "Never quit."  
sct@po.cwru.edu                -- Richard Nixon (as Watergate unfolded)  
KG8IH

From ab4el.com Wed Jul 6 11:49:16 1994  
From: btoback@netcom.com (Bruce Toback)  
Subject: Re: Toroid questions.....

>> Do the PHASING DOTS on a schematic have any significance to me as a builder?

To which Stephen Trier respnds:

>Yes. While once in a while the phasing dots are overspecified, it's  
>a good idea to always follow them if you see them. Otherwise, you  
>might end up cancelling out the signal you're trying to get.

The phasing dots are used to indicate the ends of the windings that go together. That is, if there are three windings on the core, the connections with the phasing dots on the schematic should all be made to (for example) the left side of the windings.

-- Bruce Toback  
KN6MN

From ab4el.com Wed Jul 6 13:45:53 1994  
From: xenolith@halcyon.com (Kevin Purcell)  
Subject: Re: Toroid questions.....

>Fellow QRPers.... I'm assembling the W7EL 7MHz Optimized...  
>Do the PHASING DOTS on a schematic have any significance to me as a builder?

From memory:

Wasn't the W7EL original buffer a little funky? The first version specified the dots for feedback then in a later technical correspondence/feedback W7EL showed a different version of the buffer which did have a toroid (this time just acting as a regular transformer where the phase relationship was unimportant). You might want to check that.

What are you using as the source of the circuit diagram? Original, ARRL Handbook or QRP classics (2nd printing, which I have never seen!).

73

Kevin Purcell, N7WIM / G8UDP     Are you a Mac developer? Live close to Seattle?  
xenolith@halcyon.com             We need you in the dBug Mac Dev SIG. Mail me!  
(206) 649-6489                    "Organising programmers is like herding cats"

From ab4el.com Sun Jul 3 22:42:47 1994  
From: Rick Zabrodski <zabrods@med.ucalgary.ca>  
Subject: Re: Tuners and Z match

As a collector and builder of tuners I would like to comment on the "ideal" for balanced/unbalanced. The Z match works for both but is NOT a particularly user friendly.....it takes a lot of tuning back and forth.

If you like fiddling with knobs....enjoy. It will do coax as well but in my experience not as well as a conventional t tuner.  
The standard "link coupled" tuner remains my favorite for balanced lines. They are easy to build and great for reducing interference.  
Fast and easy to use? I use the MFJ differential T tuner most of the time, especially when in contest mode. (But I do play with my balanced, z match and other tuners when time is a secondary factor!

\*\*\*\*\*  
Dr. Rick Zabrodski BSc, MD, CCFP(E)             \*             VE6GK "glider king"  
EMAIL: zabrods@med.ucalgary.ca             \*             "M.D. on weekdays"  
Packet: VE6GK@VE6YYC.#cgy.ab.can.na             \*             "Solar powered aviator"  
Phone: (403) 271-5123     Fax: 225-1276             \*             on weekends!"  
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From ab4el.com Mon Jul 4 23:04:26 1994  
From: N8ET@delphi.com  
Subject: undelivered R2/T2 info

A couple of R2/T2 info msgs bounced back to me... If the followinfg looks like your e-mail address - drop me another note and we will tyr again.

rirons@eis.calstate.edu  
PAH%Proj%RnD@bangate.pge.com

72/73 - Bill - N8ET  
Kanga US  
n8et@delphi.com

From ab4el.com Tue Jul 5 13:51:02 1994  
From: JimN00CT@aol.com  
Subject: Z-match tuner article

I wrote:

> I'm also building a Z-match (recent issue (late 93?) of Communications  
> Quarterly). Nice thing about the Z-match is that it requires no balun  
> to run coax, random wire or balanced feed line. We used one at FD  
> built by WN9V, and it too will match darn near anything.

John Seboldt <rohrwerk@holonet.net> asked:

^Can you track this down further? My current dilemma is coming up with ONE  
^design that really works for either balanced or unbalanced. For example, my  
^balanced version of W1FB's "Simple Resonant ATU" has the link wound in the  
^middle; this is less than optimum for unbalanced....

I found the article, it is Winter 1994 Communications Quarterly "A Single  
Coil Z-Match Antenna Coupler" by T. J. Seed, ZL3QQ, page 99. There are quite  
a few diagrams and drawings (drawings?) and I don't have access to a  
scanner. If you can't find the mag near you, maybe we could work something  
out

Good Luck!

72 (+/- 1) Jim N00CT

From ab4el.com Tue Jul 5 19:46:22 1994  
From: JimN00CT@aol.com  
Subject: Z-match tuner article

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